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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/625,709	07/22/2003	Sumito Nishioka	(70904) 59628	8383

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EXAMINER
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LAMB, CHRISTOPHER RAY

ART UNIT	PAPER NUMBER
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2627

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	12/22/2006	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/625,709

Applicant(s)

NISHIOKA ET AL.

Examiner

Christopher R. Lamb

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 29 September 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-51 is/are pending in the application.
- 4a) Of the above claim(s) 1-13, 16-20, 29-31 and 35-51 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 21-28 and 32-34 is/are allowed.
- 6) ☒ Claim(s) 14 and 15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Specification*

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The Examiner requested, in the previous Office Action, that the Applicant change the title. The Examiner has noted the Applicant's response, changing the title to "Optical Pickup That Uses Light Sources With Different Wavelengths For Each of Multiple Layers of a Recording Medium."

Unfortunately, this title is somewhat misleading. It is the Examiner's understanding that in the invention, the different wavelengths are actually used with different recording mediums: not with multiple layers in a single type of recording medium, which is what the title appears to imply.

The following title is suggested: "Optical Pickup That Uses Light Sources With Different Wavelengths For Each of Multiple Recording Mediums."

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States

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only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 14-15 are rejected under 35 U.S.C. 102(e) as being anticipated by Ohtaki et al. (US 6,449,095; hereafter Ohtaki).

Regarding claim 14, Ohtaki discloses:

An optical pickup for recording or reproducing information with respect to a first recording medium having a light transmissive layer of a thickness  $t_1$  on an information recording face (Fig. 5a),

the optical pickup recording or reproducing information by forming a first light spot on the information recording face by focusing a first light beam of a wavelength  $\lambda_1$  on the information recording face (Fig. 5a),

said optical pickup comprising:

a diffraction optical element (Fig. 5a: 16b) including a diffracting face (column 6, lines 17-21) and a refracting face for diffracting and refracting the first light beam so as to emit the first light beam (column 6, lines 60-64; in Ohtaki, the diffracting face and refracting face are on the same surface of the element);

an objective lens (Fig. 5a: 16a) for causing a diffracted ray of a predetermined diffraction order of the first light beam emitted from the diffraction optical element to focus on the information recording face of the first recording medium so as to form the first light spot (column 6, lines 5-26); and

a collimator lens, provided between the first light source and the diffraction optical element, for causing the first light beam from the first light source to be incident on the diffraction optical element as a parallel ray (Fig. 1: 14; column 5, lines 19-31),

the diffracting face of the diffraction optical element having such a diffraction characteristic that the first light beam is diffracted toward an optical axis (not specifically described, but inherent), and the refracting face being a concave face (column 6, lines 61-64).

Regarding claim 15:

In Ohtaki the diffraction optical element satisfies

$$\Phi = \Phi_D + \Phi_L = 0$$

where  $\Phi$  is a power of the diffraction optical element,  $\Phi_D$  is a power of the diffracting face of the diffraction optical element, and  $\Phi_L$  is a power of the refracting face of the diffraction optical element (this is inherent; all this equation says is that if the light enters as parallel light, it is emitted as parallel light, which is apparent in Ohtaki Fig. 5a).

#### ***Allowable Subject Matter***

4. Claims 21-28 and 32-34 are allowed.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

#### ***Response to Arguments***

5. Applicant's arguments filed September 29<sup>th</sup>, 2006, with respect to claims 14-15 have been fully considered but they are not persuasive.

On page 9, Applicant makes several arguments against the rejection of these claims.

First, Applicant notes that the diffraction optical element claimed converges an incident light beam toward an optical axis.

In response, the Examiner notes that this does not appear to be required by the claim. It also does not appear to be the case in Applicant's disclosed invention. The claim specifies that "the diffracting face of the diffraction optical element" must diffract light towards the optical axis. This is also what is shown in, for example, Fig. 10(a) of Applicant's disclosure (this figure corresponds to the species under examination).

However, note from the figure that the diffraction optical element as a whole does not converge light. The light exiting the diffraction optical element 211 in Fig. 10(a) is parallel to the optical axis, not converged toward it. This is because the diffracting face 211a diffracts light toward the axis, but the concave face 211b refracts the light, making it parallel. This appears to correspond to the claim.

Thus Ohtaki does not need to disclose that the diffraction optical element converges the light beam toward the optical axis: only that the diffracting face diffracts light toward the axis.

Ohtaki does not explicitly state this, but it is inherent. Ohtaki discloses (column 6, lines 60-67) that diffraction grating is built on the surface of a plano-concave lens. As Applicant notes in their own arguments, light incident on a plano-concave lens should diverge from the optical axis. However, the light is depicted in Ohtaki Fig. 5 as being emitted parallel to the optical axis. The only possible explanation is that the diverging

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property of the plano-concave lens is counter-balanced by the diffracted light being diffracted toward the optical axis by the diffraction grating.

Note that this is essentially similar to Applicant's disclosed invention: in Applicant's invention, as depicted in Fig. 10, the diffraction grating diffracts light toward the axis, and the refracting face counter-balances this so that the element as a whole emits parallel light.

Additionally, Applicant argues that the concave surface of Ohtaki "is actually that of the diffracting face." It is true that the diffracting surface of Ohtaki is built on the concave surface of the underlying plano-concave lens. However, they are clearly disclosed by Ohtaki as two separate faces, with separate properties (for example, in column 9, lines 45-60). The claim does not forbid that the two faces be on the same side of the diffraction optical element.

Third, Applicant argues that the claimed diffraction optical element "is structurally different from the diffraction optical element shown in Figures 5A and 5B of Ohtaki et al." The Examiner first notes that these figures don't actually show the plano-concave feature relied upon to reject the claim, even though it is described in the text; but second, and more important, although Applicant's disclosed element may have some structural differences from Ohtaki's disclosure, since Ohtaki discloses every element recited in the claim, Ohtaki is sufficient to reject the claim.

***Conclusion***

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

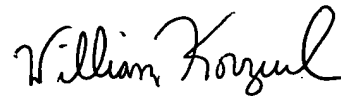
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher R. Lamb whose telephone number is (572) 272-5264. The examiner can normally be reached on 8:30 AM to 6:00 PM Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Korzuch can be reached on (571) 272-7589. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CRL 12/12/06



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